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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/607,162

06/26/2003

Nanu Brates

M894.312-0011

5627

164

7590

04/27/2006

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EXAMINER

GUHARAY, KARABI

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/607,162

Applicant(s)

BRATES ET AL.

Examiner

Karabi Guharay

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE, filed on 2/15/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 February, 2005 has been entered.

Amendment, filed on 09 January 2006 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Amended claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said end wall region portion" in lines 13-14.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeji et al. (US 6724144), and further in view of Van Keijser et al. (US 6300729).

Regarding claim 1, Takeji discloses an arc discharge metal halide lamp (lines 62-66 of column 2 & 46-50 of column 4) comprising a discharge chamber (see Fig 2) having light permeable walls of a unitary single piece structure that is free of piece part joint therein with resulting thickened portions (11A) of the side walls and of being a selected shape (cylinder) bounding a discharge region of selected volume including therein a pair of end region wall portions (11C, lines 9-19 of column 3) through each of which a corresponding one of a pair of electrodes (20) are supported to have interior ends (22) thereof positioned in the discharge region so that they are separated from one another along a common axis by a separation length, the said walls having portions thereof as wall sides between said end region wall portions with the wall sides having an effective operation inner diameter (diameter of region 11c) and having effective operation inner diameter over the separation length, where the ratio of separation length and the effective operation diameter is about 2, and with lengths of wall sides between the end region wall portions being greater than the effective operation inner diameter (lines 14-40 of column 4) the end region wall portion (wall portion of the region 11c) having inner and outer surfaces so that intersections thereof with planes containing the

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common axis (axis joining the electrodes) are smooth and have radii of curvature (Fig 3-4) there along equal to or less than half of that corresponding effective joined diameter ($R = 2.5$ mm, which less than half of the effective joined diameter (7 mm) and are separated from the interior end of the electrodes by more than 1mm (about $7/2 = 3.5$ mm -- 0.7mm which is about 2.8 mm, lines 14-27 of column 4), and ionizable materials provided in the discharge region of the chamber (lines 46-50 of column 4).

But, Takeji fails to disclose that the ratio is greater than 2.

However, in the same field of metal halide arc lamp, Keijser et al. teach an optimum value of the ratio of electrode distance over the diameter of the discharge vessel. Keijser further teaches that such ratio being greater than equal to 2, provides low wall load during lamp operation, which enhances the life of the lamp (lines 16-59 of column 2).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the value of ratio as greater than 2, since this will provide low wall load during operation of the lamp, thus enhance the life of the lamp.

Regarding claim 2, Keijser et al. disclose that the discharge chamber is formed of polycrystalline alumina (lines 37-40 of column 1). The same reason for combining art as in claim 1 applies.

Regarding claims 3-6, Keijser et al. disclose that the EA/D_i is greater than equal to 2 but less than equal to 5.5 (lines 58-59 of column 2). The same reason for combining art as in claim 1 applies.

Regarding claims 7-11, Takeji discloses that the ionizable materials include metal halide s such as iodides of Ce and Na further teaches iodides of Dy instead of claimed Pr. However, Dy and Pr are both rare earth element.

Further, It is noted that applicant's use of iodide of Pr does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of the rare earth element such as Pr or Dy.

Regarding claim 12, Takeji discloses an arc chamber 6 (lines 62-66 of column 2 & 46-50 of column 46, see Fig 2) comprising a discharge chamber having light permeable walls of a unitary single piece structure (11) that is free of piece part joints therein resulting thickened portions of said walls and being of a selected shape (cylinder) bounding a discharge region of a selected volume including therein a pair of hemispherical shape end region wall portions through each of which a corresponding one of a pair of electrodes (20) are supported to have interior ends (22) thereof positioned in said discharge region so that they are separated from one another along a common axis by a separation length, said walls having portions thereof as wall sides between said end region wall portions with an interior surface forming a truncated right cylinder having an inner diameter over said separation length in directions substantially perpendicular to said separation length such that a ratio of said separation length to said inner diameter is about 2, and with lengths of said wall sides between said end region wall portions being greater than said inner diameter, said end region wall

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portions each having inner surfaces having a radius (Fig 3-4) equal to half of said inner diameter which are separated from said interior ends of said electrodes by more than one millimeter (about $3.5 - 0.7 = 2.8$ mm, lines 14-27 of column 4) and ionizable materials (lines 46-50 of column 4) provided in said discharge region of said discharge chamber.

But, Takeji fails to disclose that the ratio is greater than 2.

However, in the same field of metal halide arc lamp, Keijser et al. teach an optimum value of the ratio of electrode distance over the diameter of the discharge vessel. Keijser further teaches that such ratio being greater than equal to 2 provides low wall load, which enhances the life of the lamp (lines 16-59 of column 2).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the value of ratio as greater than 2, since this will provide low wall load during operation of the lamp, thus enhance the life of the lamp.

Claim 13 recites essentially the same limitations of claim 2. Thus claim 13 is rejected as claim 2 (see rejection of claim 2).

Claims 14-17 recite essentially the same limitations of claims 3-6 respectively. Thus claims 14-17 are rejected as claims 3-6 (see rejections of claims 3-6).

Claims 18-22 recite essentially the same limitations of claims 7-11 respectively. Thus claims 18-22 are rejected as claims 3-6 (see rejections of claims 7-11).

Response to Arguments

Applicant's arguments filed 1/9/06 have been fully considered but they are not persuasive.

In response to applicant's argument presented on page 7 paragraph 2 of the Remark, examiner respectfully presents that Takeji teaches a discharge chamber having walls of a unitary single piece structure (11 of Fig 2), and the narrow end region (neck portion of the main body, 11C) having inner and outer surface which is smooth.

Argument of terminal plate is irrelevant since as far as the wall of the end region (wall of 11C) is concerned it satisfies the claimed structural limitations.

Further applicant contends that Takeji's arc tube does not have end region of the discharge chamber (11) having hemispherical structure, however, examiner respectfully disagrees. Claimed body has tapered diameter at the end regions compared to the main discharge region as in case of Takeji's arc tube. Further, region 11B of Takeji is hemispherical in shape.

Contact Information

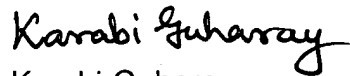
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (571) 272-2452. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karabi Guharay
Primary Examiner
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